

Global Warming and the Physical Properties of Carbon Dioxide Gas.

The current concept known as man-made or anthropogenic global warming (AGW), has tenets that violate several of the known laws of our physical universe. I provide the validation of the impossibility of AGW below. My qualifications are an extensive university-trained scientific background in physics and thermodynamics and over 35 years of work experience in applying physics and thermodynamic principles.

Greenhouse Gas

“Greenhouse gas” is an oxymoron for anyone trained in physics and thermodynamics. First, let us examine how a real greenhouse actually works. There are two ways a greenhouse causes the air beneath it to become warm and more importantly, stay warm. The glass in a greenhouse is transparent to shortwave infrared radiation, but opaque to longwave infrared radiation. As such, it permits the shortwave infrared radiation from the sun to pass through and warm the contents of the greenhouse. The infrared radiation emitted from the greenhouse contents is longwave so it is reflected at the glass surface back to the contents: warming them slightly. CO₂ gas cannot act as a greenhouse in the troposphere as it cannot reflect infrared radiation. Basic physics teaches us that the only time gases can reflect radiation is when there is a boundary layer change in “state” such as between a gas and the vacuum of space. In this way some infrared radiation is reflected off the boundary layer of our upper atmosphere back into space. The change in state boundary layer between a gas and a liquid allows a liquid to reflect infrared radiation. That is why atmospheric water vapor (small droplets of liquid water known as clouds) can reflect longwave infrared radiation back to earth. Of course the same water vapor also reflects infrared radiation back into space. That is why it is warmer on cloudy nights and cooler on cloudy days. If the CO₂ existed as cloud cover, the transition boundary between the air and the CO₂ vapor could reflect infrared radiation back to the earth. But if the atmospheric pressure were high enough to form CO₂ clouds on its own, there wouldn't be any humans (or anything else) living on earth.

Convection Cooling

The small amount of warming due to glass reflecting longwave infrared radiation back to the greenhouse contents continues to warm them because of the major reason greenhouses stay warm: preventing the movement of the air beneath the glass. Usually when a gas is heated it becomes less dense and rises – transferring heat to its surroundings until it cools and then sinks back down. Wind currents also play a part moving warm gases to different places where they may transfer heat to cooler gases, liquids and objects. By preventing natural convection cooling; the interior of the greenhouse warms. That is why we close the windows in our house during the winter: to prevent convection cooling. Of course there is no such impediment to gas movement in our atmosphere. So it is impossible for a gas to form a greenhouse in the sky because that theory ignores that an earthbound greenhouse works by reflecting infrared radiation and impeding convection, not absorbing and re-transmitting radiation.

Radiative Forcing

The theory most AGW proponents actually use is not a “greenhouse” analogy at all, but a theory based on radiative forcing. In this theory, what the AGW proponents refer to as a “greenhouse gas” absorbs longwave infrared radiation from the earth and re-radiates that energy back to the earth to create a “forcing” of continually rising temperature. In the realm of molecular physics, any non-atomic gas has the ability absorb an infinitesimal amount of energy and then release that energy. This theory also forces us to also treat any atmospheric vapor as a “greenhouse gas”. Unfortunately, the AGW proponents ignore the affect of atmospheric vapors and also assume that the radiative emissions of CO₂ are ALL directed toward the earth and not in all directions as physics would demand. They offer no explanation for this and cannot validate this theory by experiment. Even if we assume that the AGW greenhouse gas radiative forcing theory was legitimate, humans cannot possibly have more than a miniscule affect on planet temperature as shown below.

Overall, the most abundant and dominant “greenhouse gas” in the atmosphere is water vapor [1]. Most people are unaware that some greenhouse gases are much more efficient at absorbing infrared radiation (holding heat) than other gases. Carbon dioxide absorbs infrared radiation in narrow bands of frequencies at wavelengths of

2.69 micrometers (μm), 2.76 μm , 4.25 μm , 14 μm , and 15 μm [2]. This means that most of the heat producing radiation escapes it. Probably about 3%, (some estimates are as high as 8%) of the available black body radiation is picked up by frequencies of carbon dioxide. The infrared absorption spectra of CO_2 also means it absorbs more short wave than long wave radiation thereby preventing heat from getting to the earth in the first place, making it a net cooling gas, not a warming one!

Water vapor is much more efficient at absorbing infrared radiation than carbon dioxide is [3] [4]. Given the present composition of the atmosphere, the contribution to the total theoretical global greenhouse heating rate is around 95 percent from water vapor [5] [6]. Ignoring the net cooling properties of CO_2 gas, factoring in water vapor and infrared absorption efficiency, anthropogenic carbon dioxide could cause only about 0.117% of earth's theoretical greenhouse effect. If we add up all anthropogenic greenhouse sources including oxides of nitrogen and CFC's, the total human contribution to the theoretical greenhouse effect would be around 0.28%. Even if the AGW greenhouse gas radiative forcing theory were true and if mankind were wiped off the face of the earth, it would only reduce the theoretical global warming effect by 0.28% (This tiny amount is much less than the error of your average thermometer). Please note that ALL my data sources are from groups promoting the AGW hoax.

The Second Law of Thermodynamics

The most damning aspect of the “Greenhouse Gas” theory is that it violates the Second Law of Thermodynamics (simply stated: “Warmth can never spontaneously pass from a body of low temperature to a body of higher temperature”). Since the temperature in the troposphere decreases with increasing height, it is impossible for a gas to radiate heat to a warmer earth, it will always radiate heat upward to cooler gases. Hot air always rises! AGW proponents believe that hot air sinks, hence none have been able to validate the greenhouse gas theory by experiment.

This presentation on the impossibility of anthropogenic global warming is designed for the layman. For a more thorough treatment of the impossibility of AGW check out: “[Falsification Of The Atmospheric \$\text{CO}_2\$ Greenhouse Effects Within The Frame Of Physics](#)” by Gerhard Gerlich of the Institut fur Mathematische Physik Technische Universitat Carolo-Wilhelmina zu Braunschweig.

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Notes:

[1] U.S. Anthropogenic Greenhouse Gas Emissions

http://www.epa.gov/climatechange/emissions/downloads/ghg_gwp.pdf

[2] Greenhouse Gas Spectral Overlaps and Their Significance – Table D1

http://www.eia.doe.gov/cneaf/alternate/page/environment/appd_d.html

[3] Greenhouse Gas Spectral Overlaps and Their Significance – Figure D1

http://www.eia.doe.gov/cneaf/alternate/page/environment/appd_d.html

[4] Radiation Absorption Characteristics of Water Vapour and Carbon Dioxide

<http://www.bom.gov.au/info/climate/change/gallery/4.shtml>

[5] Greenhouse Gas Spectral Overlaps and Their Significance

http://www.eia.doe.gov/cneaf/alternate/page/environment/appd_d.html

[6] Refinement of the Geophysical Fluid Dynamics Laboratory Solar Benchmark Computations and an Improved Parameterization for Climate Models

http://www.gfdl.noaa.gov/bibliography/related_files/smf0501.pdf?PHPSESSID=1a63e8f8572464dec0bda0fb98bfd5c2